Site CAM Report

Coastal Area Management Environmental Analysis for the Construction of a Pool and Pool Patio at 40 Swifts Lane Darien, Connecticut

Prepared for:

James & Liane Hamilton
40 Swifts Lane
Darien, Connecticut 06820

Date Prepared:

May, 2021

Prepared by:
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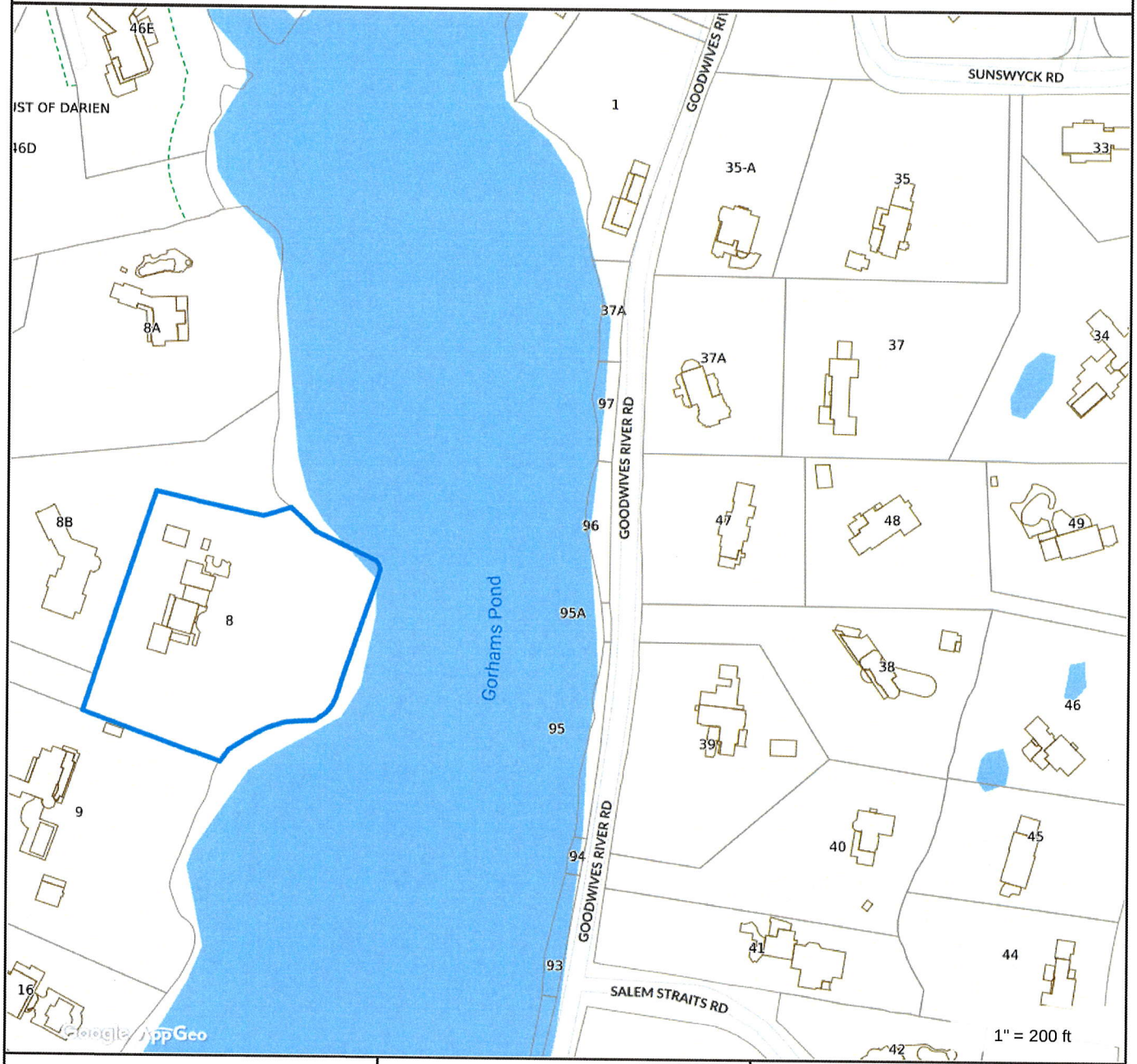
40 Swifts Lane



Property Information

Property ID	10510
Location	40 SWIFTS LANE
Owner	HAMILTON JAMES &

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Darien, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 3/15/2021
Data updated 3/11/2021

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

COASTAL AREA MANAGEMENT ENVIRONMENTAL ANALYSIS FOR THE CONSTRUCTION OF A POOL, POOL PATIO AND SPA AT 40 SWIFTS LANE, DARIEN, CONNECTICUT

This report evaluates the potential environmental and coastal area management impacts associated with the construction of an in ground pool, pool patio and spa located on Swifts Lane in Darien, Connecticut. The property has direct waterfront access to Gorham's Pond.

Information gathered from the site survey and field investigations was studied and analyzed. This evaluation concluded that the plan, as proposed, can be implemented with no significant long-term adverse impacts to the natural coastal resources.

Section 1 – Site Location

The property is a 94,686 ± square foot or 2.1737 ± acres developed lot located on the easterly end of Swifts Lane and has direct access to the shoreline of Gorham's Pond. The property is accessed by an asphalt paved driveway located parallel to the westerly property line. The property is surrounded by other single family residences on three sides and Gorham's Pond to the east.

Section 2 – Existing Conditions

2.1 Existing Residence and Site

The existing residence is a 2-story, six-bedroom house constructed in 1719, with a renovation completed in 2002, according to the Assessor's card. There are two additional structures on the property. At the north end of the driveway there is a barn that could be used as a detached garage and east of the barn there is a small shed. These structures are located on a 2.1737 ± acre lot in the R-1 (one acre) residential zone in the Town of Darien, CT. The residence is accessed from the west via a pathway from the existing driveway.

The house and the out buildings are surrounded on all sides with a maintained lawn and landscaping. The planted landscape is comprised of native and ornamental trees, shrubs and perennial plantings. There are ornamental gardens and brick walks located to the east of the rear portion of the house. To the south there is a sunken garden with a small man-made water feature. There are native plants along the northern and eastern boundaries between this property and the adjacent property to the north and along the edge of Gorham's Pond. There is a stonewall "seawall" located along the shoreline of Gorham's Pond.

The property has direct access to the Long Island Sound.

A. Topography, Surface Runoff and Drainage.
   The high point of this property is at elevation 37± located west of the barn near the westerly property line. The existing elevations around the house are between elevation 17.3± and 18.3±. The existing house first floor elevation is 19.6± and the garage slab is at elevation 18.0 ± according to the survey plan. The lowest portion of the property

landward of the stonewall long Gorham's pond is at 3.2± at the edge of the shore of Gorham's Pond. The lowest portion of the property seaward of the seawall is at 2.7±.

Based on the existing topographical survey and site observations the runoff from the property will flow mainly in a west to east direction. There is a slight ridge line in the lawn area east of the rear portion of the house that will direct the runoff in a north or south direction. Ultimately all runoff from this property will drain to Gorham's Pond.

B. Soils and Inland Wetlands.
The U.S. Department of Agriculture Natural Resources Conservation Services (NRCS) classified the soil on-site as Charlton-Chatfield complex 0 to 15% or 15% to 45% slopes. Based on the NRCS the complex is about 45 to 50 percent Charlton soils, 30 percent Chatfield and 20 to 25 percent minor components.

There is an inland wetlands which is located along the shoreline of Gorham's Pond.

C. Vegetation.
The vegetation associations on the lot consist of native and ornamental plant species growing within upland plant habitats. During the development of the lot many years ago it appears that many of the native trees were saved to create the present day landscape.

D. Tidal Wetlands.
Reviewing the Coastal Resource Map as prepared by the Coastal Area Management Program, Connecticut Department of Environmental Protection indicates that seaward of the seawall are estuarine embayments. Estuarine embayments are protected coastal water bodies with an open connection to the Sound including tidal rivers, bays, coves and lagoons.

E. Coastal Resource Features.
A field investigation identified the following coastal resources on or adjacent to the site: estuarine embayments. There is also the coastal 'flood' hazard area.

F. Floodplain and Flooding.
The lower portion of this property that is located near the shoreline of Gorham's Pond lies totally within a 1% annual chance flood boundary in accordance with the Federal Emergency Management Agency (FEMA) insurance rate map.

G. Site Utilities.
All existing utilities, electric, phone and cable service wires enter the property from the south from Swifts Lane. The existing house is connected to the lower pressure sewage system in Swifts Lane via E-one grinder pump. The existing residence is served by municipal water.

Section 3 – Proposed Development

3.1 Development Plan

The site development plan for this property is to construct an in ground pool, pool patio and spa. Other work associated with this project will be minor regrading around the pool and the

installation of a stormwater management system. The site development plan has been prepared using the site survey information by William W. Seymour & Associates, PC, Darien, CT. The location of the proposed pool and pool patio was developed by the project architect, Austin, Patterson & Diston, Southport, CT.

It is proposed to install a channel drain along the edge of the patio to collect the runoff and convey the runoff to a subsurface bio-retention area. This subsurface bio-retention area will consist of Cultec C-4 chambers. There will be grates to the existing grade over the subsurface bio-retention area as an overflow. Once the subsurface bio-retention area overflows it will sheet flow towards Gorham's Pond. The stormwater treatment system has been designed to collect runoff for the water quality volume consisting of one-inch of runoff from surface areas from the pool and pool patio. The runoff from the subsurface bio-retention area will infiltrate into the surrounding soils with an ultimate discharge into Gorham's Pond.

The proposed site plan is subject to review and approval by the Town of Darien's Planning and Zoning Commission under Coastal Area Management regulations.

A waiver of Section 880 of the Darien Zoning Regulations is being requested to waive the requirements of a full stormwater management study due to the property being adjacent to Gorham's Pond and provide a bio-retention system for the water quality volume from the proposed impervious areas.

Section 4 – Coastal Resources and Coastal Use Policies

4.1 Coastal Resources

In accordance with the Connecticut Coastal Area Management Act, the following coastal resources, including general resources, have been identified on or adjacent to the property: estuarine embayments. The proposed work avoids impact to the sensitive coastal areas due to work being done within the existing lawn.

4.2 Coastal use Policies

The Connecticut Coastal Area Management Act, Coastal Use Policies, applicable to this site is the general development and water dependent uses. The construction of a pool and pool patio with minor regrading around the pool along with other site work associated with this project has been planned to avoid environmentally sensitive site areas and the overall environmental quality of the site will remain or be restored to a residential landscape after construction is completed. Reference is made to the attached coastal area management charts.

The current use and proposed land use of this property is a single-family private residential use. Current and proposed access to this lot is via existing asphalt paved driveway serving the existing residence. Since the water-dependent use component of the Coastal Use Policies deals specifically with land uses requiring waterfront sites (boat basins, fishing) and/or provisions for public access, this coastal use is not considered applicable for the existing single family residential property.

Section 5 – Potential Adverse Impacts

The proposed construction of the in ground pool and pool patio and other site work associated with the construction activity will be partly within the 100-foot regulated area of Gorham's Pond which will not result in long-term environmental impacts to the natural ecosystems. All construction activity has been planned to occur within a previously constructed residential landscape which will be restored as part of the project.

During the anticipated construction period the potential for environmental impacts resulting from erosion and sedimentation is possible. This potential for environmental impact can be managed and controlled with the proper installation and maintenance of sediment and erosion control devices. During and after construction, the surface stormwater runoff patterns will remain generally the same.

The study site is not known, nor is it designated by the Town of Darien or State of Connecticut as a scenic overlook or vista area. However, the property is an integral part of the viewscape of the residential development along Gorham's Pond. The entire site is privately owned and access to the property is restricted to the single family land use.

Section 6 – Potential Beneficial Impacts

Collecting and treating the runoff from the proposed impervious surfaces will provide a beneficial impact to the coastal resources. The construction of the in ground pool and pool patio located within an existing lawn area will not impact the natural resources any more than what is being impacted. The redevelopment will have a positive environmental impact on the surrounding coastal area.

Section 7 – Mitigation

Erosion controls will be installed prior to the commencement of construction related activities. These controls will be maintained in proper working order throughout the construction phase and will be removed after all construction is completed and disturbed site areas have been restored to a quality residential landscape condition. It is also proposed to collect the runoff from the impervious areas and convey the flow to a subsurface bio-retention area. The subsurface bio-retention system will act as a primary treatment system to capture the water quality volume, below the outlet invert, consisting of the first inch of runoff from the impervious area. The subsurface stormwater management system will promote infiltration into the surrounding ground to reduce the nutrient loads to Gorham's Pond.

Section 8 – Conclusion

Construction of the in ground pool and pool patio will remove only some of the existing lawn area. The landscape disruption will be balanced and mitigated by the establishment of a new lawn area and keeping the existing landscaping as much as possible throughout the property. Erosion controls will be used throughout the construction period.

Planning efforts have been implemented to reduce, minimize, or mitigate activities on the property that will affect the ecological balance of the natural ecosystems on or in the vicinity of the site and provide for a viable continued high quality residential use of the property.

Erosion and sediment controls will be utilized during the land development period to minimize impacts of related stormwater runoff.

Hamilton Residence –40 Swifts Lane, Darien, CT

Appendix A:

Coastal Area Charts

DiVesta Civil Engineering, LLC

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COASTAL AREA MANAGEMENT – COASTAL RESOURCES .... Page 1	Resource On-site	Resources Adjacent To Site	Resources Affected by The Activity	Resource Not Affected By The Activity	Resource Not Present or Applicable	COMMENTS
General Resource					√	
Bluffs and Escarpments					√	
Rocky Shorefront					√	
Beaches and Dunes					√	
Intertidal Flats					√	
Tidal Wetlands					√	
Freshwater Wetlands and Watercourses					√	

COASTAL AREA MANAGEMENT – COASTAL RESOURCES .... Page 2	Resource On-site	Resources Adjacent To Site	Resources Affected by The Activity	Resource Not Affected By The Activity	Resource Not Present or Applicable	COMMENTS
Coastal Hazard Areas	√					Only a portion of the property adjacent to Gorham's Pond is located within the Coastal Hazard Area.
Developed Shorefront					√	
Island					√	
Shorelands					√	
Shellfish Concentration Areas					√	
Coastal Waters and Estuarine Embayments		√				The property is adjacent to this coastal resource.
Air Resources and Air Quality					√	

COASTAL AREA MANAGEMENT – ADVERSE IMPACTS .... Page 1	Applicable	Not Applicable	Impact	No Impact	REMARKS
Degrading water quality through the significant introduction into either coastal waters or groundwater supplies of suspended solids, nutrients, toxics, heavy metals or pathogens, or through the significant alteration of temperature, pH, dissolved oxygen, or salinity. [Source: CGS Section 22a-93(15)(A)]				√	This project will provide treatment of the stormwater quality volume and add native landscape throughout the property.
Degrading existing circulation patterns of coastal waters through the significant alteration of existing patterns of tidal exchange of flushing rates, freshwater input, or existing basin characteristics and channel contours. [Source: CGS Section 22a-93(15)(8)]		√			
Degrading natural erosion patterns through the significant alteration of littoral transport of sediments in terms of deposition or source reduction. [Source: CGS Section 22a-93(15)(C)]		√			
Degrading natural or existing drainage patterns through the significant alteration of groundwater flow and recharge and volume of runoff. [Source: CGS Section 22a-93(15)(D)]		√			.
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones. [Source: CGS Section 22a-93(15)(E)]		√			

COASTAL AREA MANAGEMENT – ADVERSE IMPACTS .... Page 2	Applicable	Not Applicable	Impact	No Impact	REMARKS
Degrading visual quality through significant alternations of the natural features of vistas and viewpoints. [Source: CGS Section 22a-93(15)(F)]		√			
Degrading or destroying essential wildlife, finfish, or shellfish habitat through significant alterations of the composition, migration patterns, distribution, breeding, or other population characteristics of the natural species or significant alterations of the natural components of the habitat. [Source: CGS Section 22a-93(15)(G)]		√			
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics of function. [Source: CGS Section 22a-93(15)(H)]		√			

COASTAL AREA MANAGEMENT – COASTAL USE POLICIES .... Page 1	Applicable	Not Applicable	COMMENTS
General Development	√		The construction of an in ground pool and pool patio will not adversely impact the existing quality of the site or residential neighborhood; it will actually improve the quality of the surrounding area.
Water Dependent Uses		√	
Ports and Harbors		√	
Coastal Structures and Filling		√	
Dredging and Navigation		√	
Boating		√	
Fisheries		√	

COASTAL AREA MANAGEMENT – COASTAL USE POLICIES .... Page 2	Applicable	Not Applicable	COMMENTS
Coastal Recreation and Access		√	
Sewer and Water Lines	√		The existing dwelling is connected to both municipal sewer and water.
Energy Facilities		√	
Fuel Chemicals and Hazardous Materials		√	
Transportation		√	
Solid Waste		√	
Dams, Dikes and Reservoirs		√	

Hamilton Residence -40 Swifts Lane, Darien, CT

Appendix B:

Coastal Resources

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DiVESTA CIVIL ENGINEERING, LLC		
TEL: (860) 354-4226	51 PAINTER RIDGE ROAD ROXBURY, CONNECTICUT	FAX: (860) 354-4226
PROJECT: HAMILTON RESIDENCE 40 SWIFTS LANE, DARIEN, CONNECTICUT		
TITLE: COASTAL RESOURCES		
SCALE: NTS	DATE: 04/30/21	DRAWING No. D-1
DRAWN: DD	APPROVED BY: DD	

Hamilton Residence -40 Swifts Lane, Darien, CT

Appendix C:

Web Soils

DiVesta Civil Engineering, LLC

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Soil Map—State of Connecticut
(40 Swifts Lane)

Map Scale: 1:1,220 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 21, 2014—Aug 27, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	2.5	48.0%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	1.7	32.6%
W	Water	1.0	19.3%
Totals for Area of Interest		**5.3**	**100.0%**

State of Connecticut

73C—Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky

Map Unit Setting

National map unit symbol: 2w698
Elevation: 0 to 1,550 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton, very stony, and similar soils: 50 percent
Chatfield, very stony, and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton, Very Stony

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Chatfield, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope

Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: No

Hollis, very stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Leicester, very stony

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: State of Connecticut
Survey Area Data: Version 20, Jun 9, 2020